Alaska Native
Tribal Health Consortium

AFHCAN

Growing Telehealth

Getting from Here … to There

Stewart Ferguson Ph.D., *Director of Telehealth, ANTHC*
John Kokesh MD, *Chief of Otolaryngology Dept., ANMC*

Here: Functional Telehealth Programs and Projects

Current successes and lessons learned for policies and funding objectives.

Alaska Native
Tribal Health Consortium

AFHCAN

"Telemedicine is the use of medical information exchanged from one site to another via electronic communications to improve patients' health status."

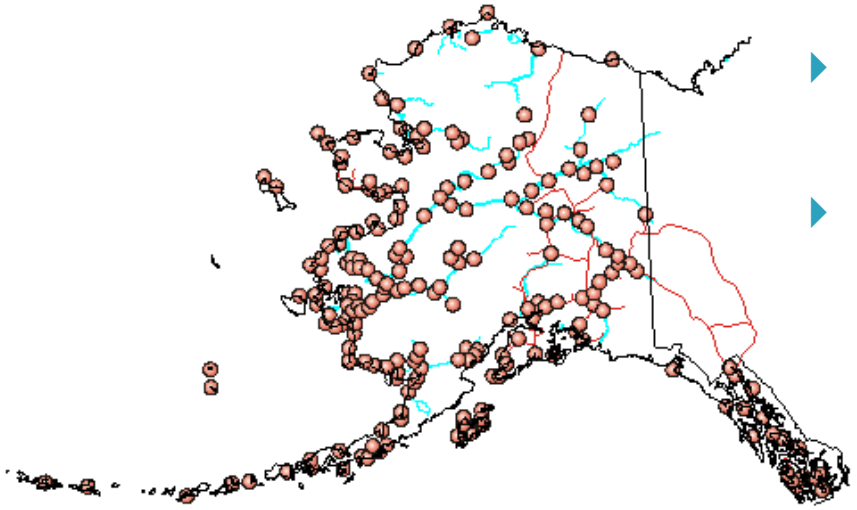
"… "telehealth" .. is often used to encompass a broader definition of remote healthcare that does not always involve clinical services. "

ATA Defining Telemedicine
http://www.americantelemed.org/news/definition.html

Telehealth Workflow Challenges

- Multi-provider, multi-region, multi-organization, multi-jurisdiction, patient participant….
- Focus on integrating with the way providers work and formalizing relationships and mutual responsibilities:
  - Who accepts referrals?
  - Do they have specific data requirements?
  - How fast must they answer?
  - How do you track what is happening?
  - How is everyone paid?
  - Who gets notified and must respond when the patients telemetry data tanks?

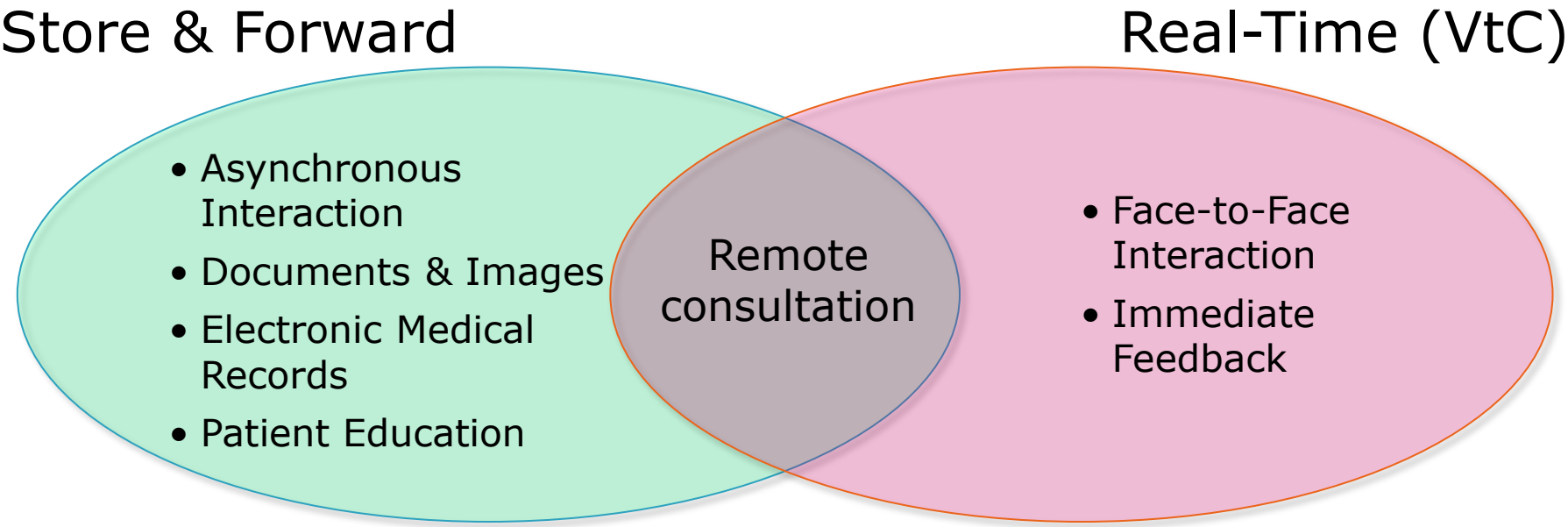
AFHCAN Telehealth



- 8 year Operational History
  - 12,000 cases / year
- Research and Production Telehealth System
  - Design → Installation → Training → Support → Marketing

- Installed Customer base includes:
  - Alaska: 248 sites, **<u>44 organizations</u>**
    - 37 Tribal organizations
    - US Army sites (6) & US Air Force bases (3)
    - State of Alaska Public Health Nursing (26)
    - US Coast Guard clinics (5)
    - US Coast Guard cutters and ice breakers (6)
  - Lower 48, Panama, Greenland

Store & Forward vs Real-Time Telehealth



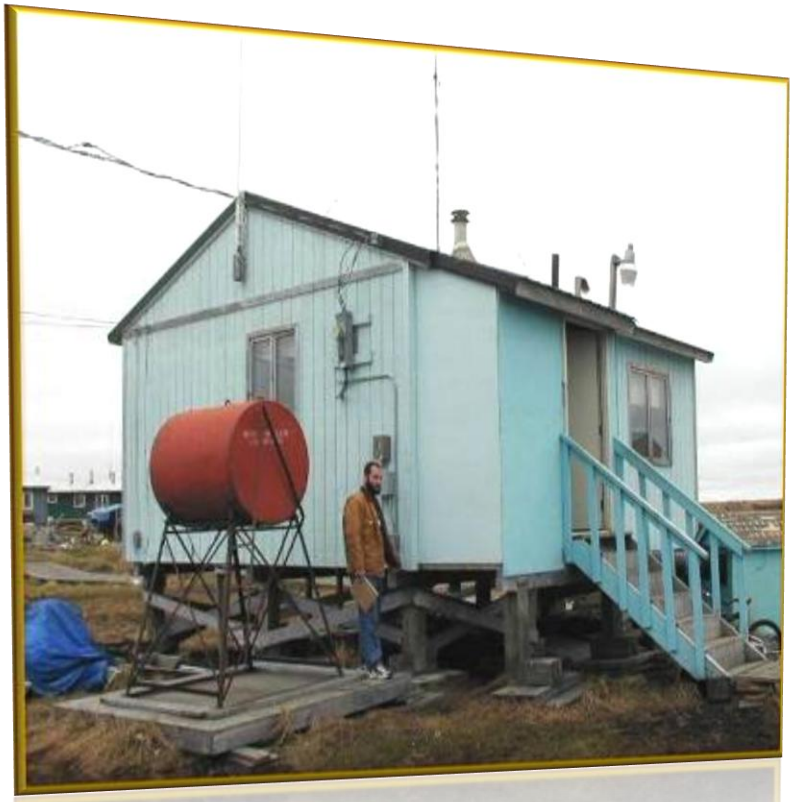
Clinical specialties for telemedicine

- Radiology
- Dermatology
- Pathology
- Oncology
- Ophthalmology
- Dental

- Cardiology
- ENT
- GI
- Pulmonary
- Rheumatology

- Psychology/ Psychiatry
- Neurology
- Speech therapy
- Physical therapy

Case originated…



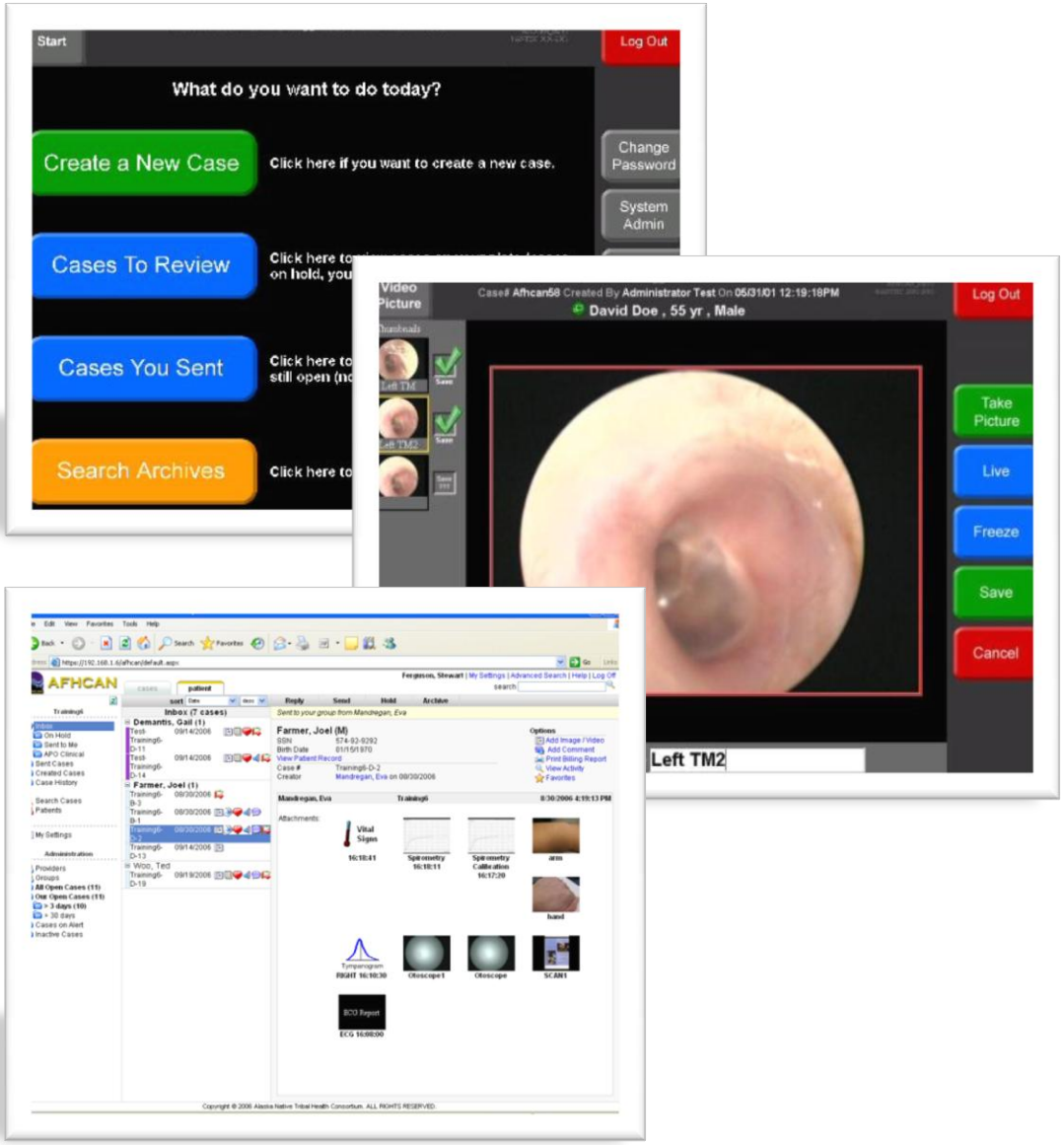
…Case received.

A Primary Care Tool

- Ear Disease
  - Audiometer, Tympanometer, Video Otoscope
- Heart Disease
  - ECG & Vital Signs Monitor
- Respiratory Illness
  - Spirometer & Vital Signs Monitor
- Trauma, Skin & Wound
  - Digital Camera
- Dental Problems
  - Dental Camera
- General
  - Scanner & Forms
- Urgent Care / Critical Care
  - Video Camera

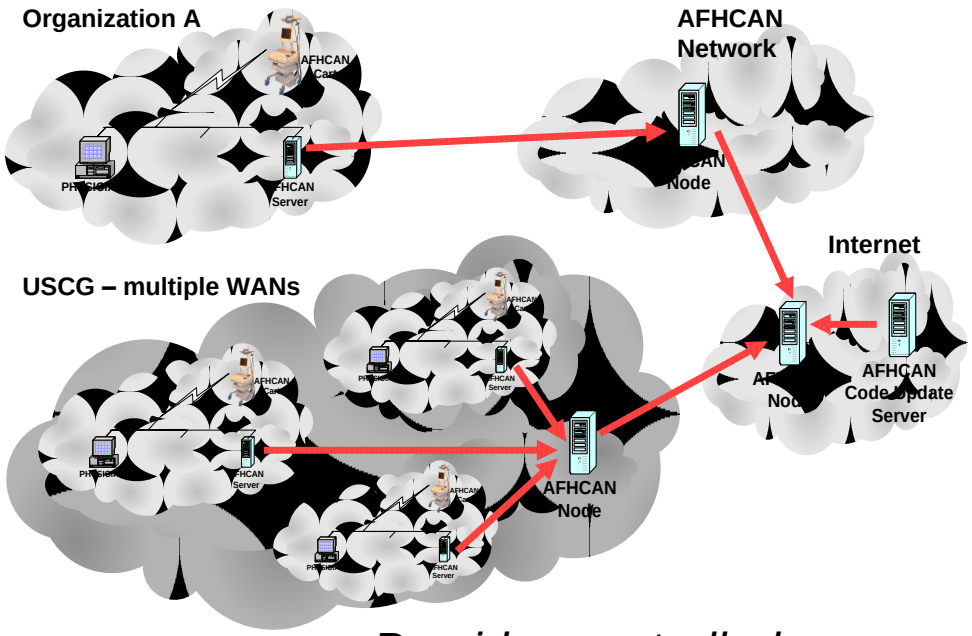
A User Interface Designed by Clinicians

- Simplicity is key for Case Creation.
  - Minimize need for keyboard skills
  - Touchscreen
  - Color coded
- Rich Web Interface for Specialists



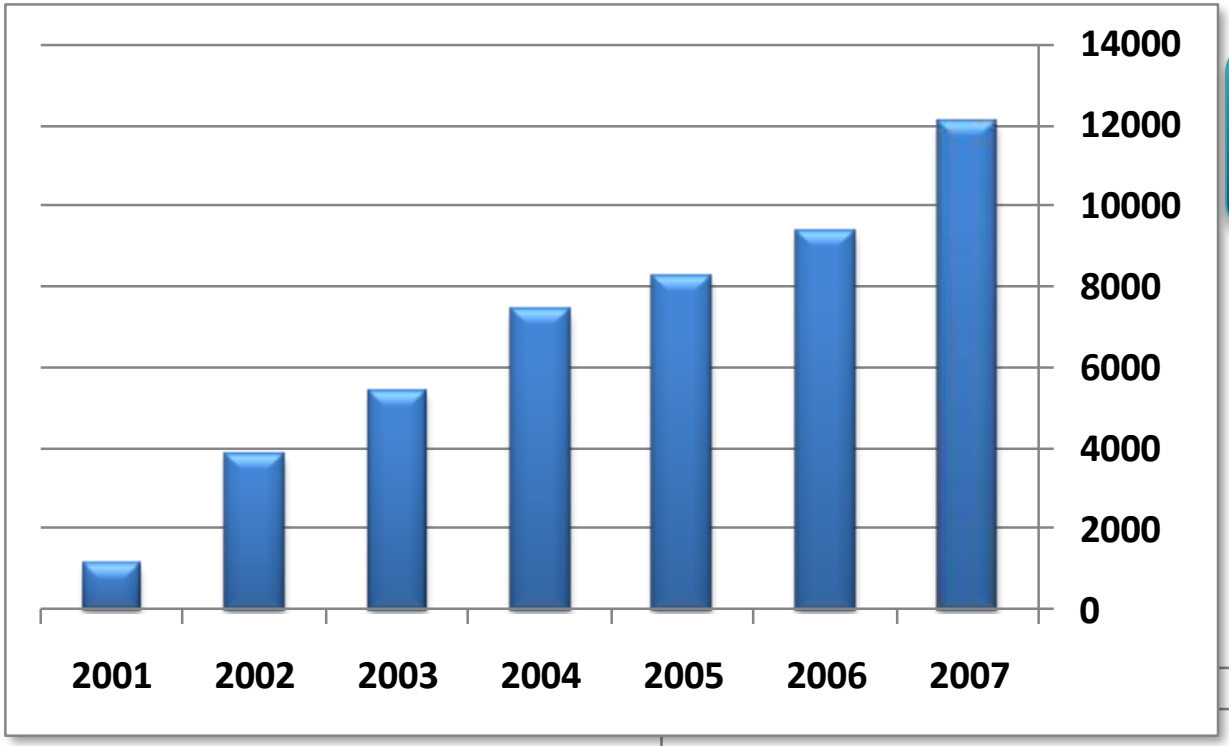
Fitting Existing Clinical Workflow

- The AFHCAN software supports existing referral patterns …
  - The software enables and facilitates healthcare delivery without generating new business rules.
- … and serves as a platform for new clinical relationships.
  - Trust Relationships can be established between one or many organizations

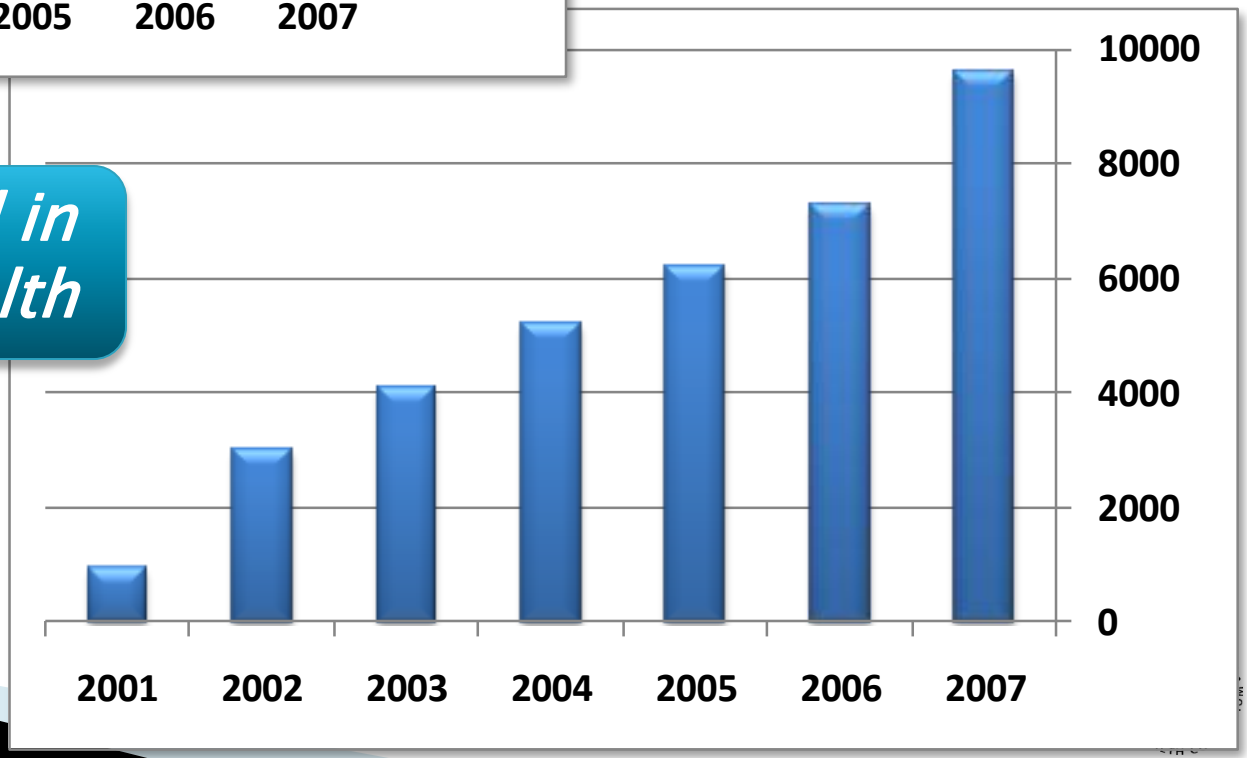


Provides controlled, secure and robust data sharing consistent with HIPAA Privacy and Security requirements

Telehealth Cases Created



Patients Involved in AFHCAN Telehealth



ANMC Departments now accepting Telehealth cases

- Cardiology
- CHA/P Training
- Dermatology
- Endocrinology
- Emergency Room
- ENT
- Ophthalmology
- Inpatient Pediatrics
- Pediatric Critical Care
- Podiatry
- SCF Pediatrics
- SCF Family Medicine
- SCF Women's Health
- Surgery
- Urology
- Trauma Follow-Up

Appropriate application of telehealth technologies creates a more efficient care delivery system.

This is shown through more rapid access, decreased burden on resources, and lower "system" costs.

THE ALASKA NATIVE HEALTH CARE SYSTEM

Location Names and Service Level

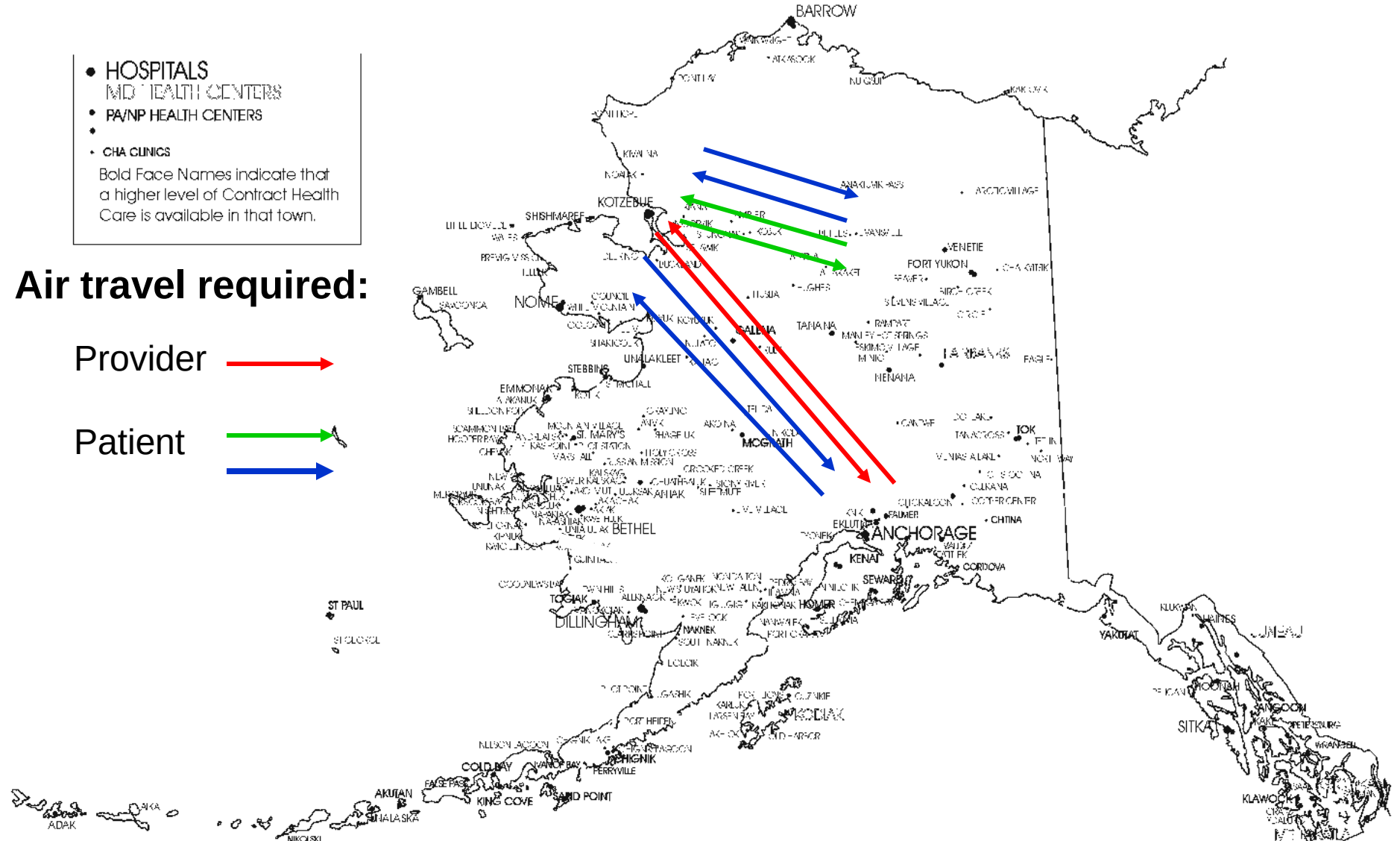
- HOSPITALS
- MD HEALTH CENTERS
- PA/NP HEALTH CENTERS
- CHA CLINICS

Bold Face Names indicate that a higher level of Contract Health Care is available in that town.

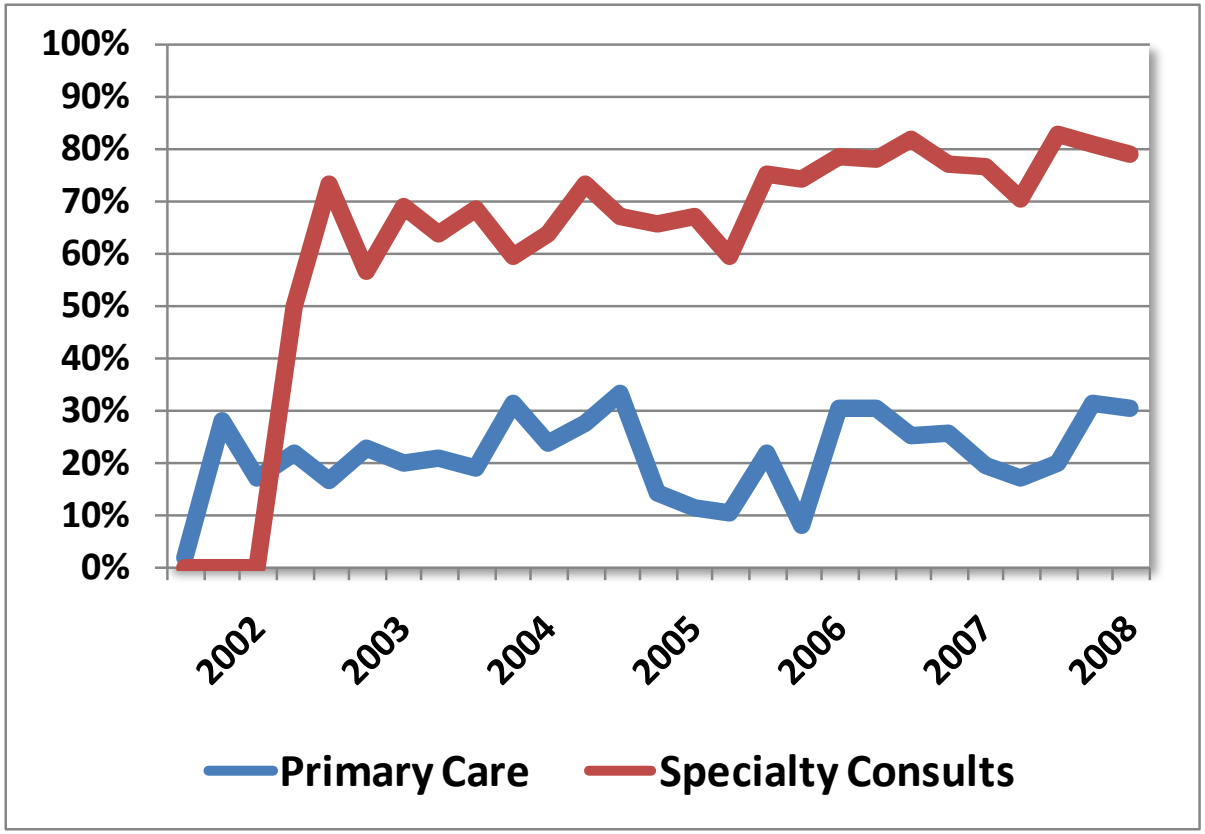
Air travel required:

Provider

Patient



Impact of Telehealth on Preventing Patient Travel



Patient travel is prevented for almost 80% of all specialty consults.

Travel is prevented for about 20% of all primary care cases.

Responses were received to the travel question on 13,510 cases

Impact of Preventing Patient Travel

	Primary Care		Specialty Consults	
	Annual (2007)	TOTAL	Annual (2007)	TOTAL
Number of Cases	8614	38,061	2605	10,685
% Preventing Travel	20.5%	20.7%	77.8%	72.5%
Savings	$0.79 m	$3.55 m	$2.73 m	$10.45 m

Travel savings generated by the use of AFHCAN telehealth amounts to approximately $14 million for 15,600 patients.

Annual travel savings, based on 2007 data, is approximately $3.5 million for 3,800 patients

Medicaid Study

Decreased Travel = Cost Savings

	Quantity	Cost
Claims Paid by Medicaid	**91**	**($6,970)**
Telemedicine Prevented Travel	**79**	**$55,437**
Net Savings Realized by Medicaid		**$48,467**

Notes:

- Only specialty clinic travel is being saved.
- 86% of cases were from village → region
- Assume all cases had an escort
- Travel costs average $307.57 RT per person
- No lodging / per diem calculated

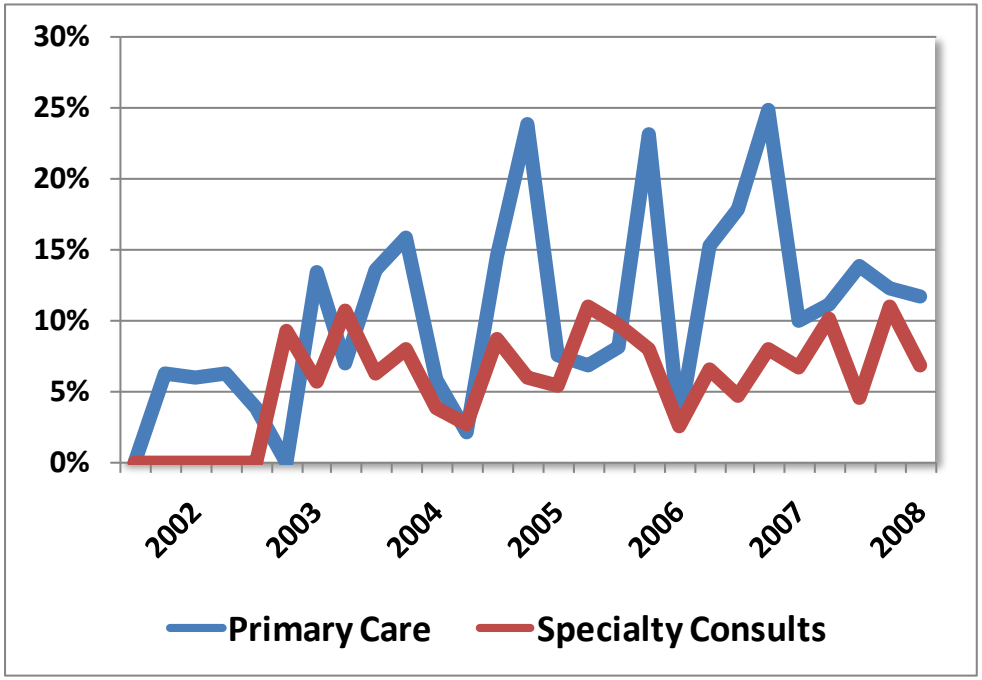
Note: For every $1 spent by Medicaid on reimbursement, $7.95 is saved on travel costs.

Successful Telehealth Usage

- Telehealth is most successful when it obviates a need for a further "in-person" visit with a specialist.

- **In a recent study of 1,933 telehealth cases created from 2002-2007 at one regional partner, 90% of the patients did not need to see a specialist.**
  - Cost savings: $514,200 for travel alone.
  - The 219 patients requiring an "in-person" could be appropriately triaged.

Impact of Telehealth on Causing Patient Travel



Patient travel is caused by Telehealth in 8% of all cases

"Our team and the community health aide utilized the EKG capability of the telemedicine cart, captured the EKG and sent it to the regions hospital for closer review. … We were later briefed it probably saved his life."

WILLIAM E. SORRELLS, Capt, USAF, MSC, FACHE, CPHIMS.
3rd Medical Group, Elmendorf AFB

Meeting "Standards of Care"

- Post-surgical follow-up is difficult for patients from remote settings.

- Telehealth provides ability to monitor and followup.

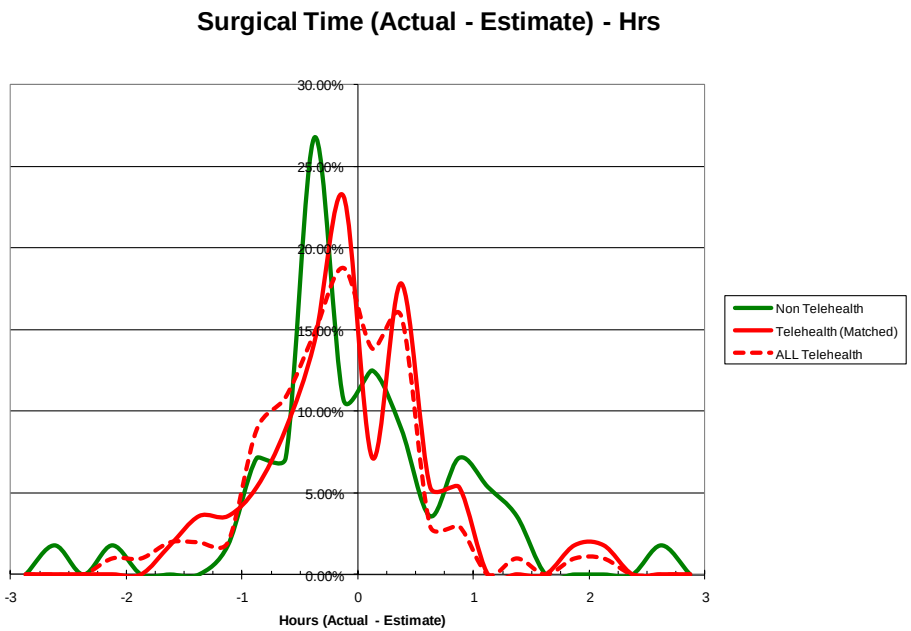
"Many simple problems, such as tympanostomy tube follow-up can be done with telemedicine without asking the patient to leave their village."

ENT Specialist

  - Validated model
  - "Reverse Consult" empowers CHA/Ps and midlevels to respond to requests from specialists.

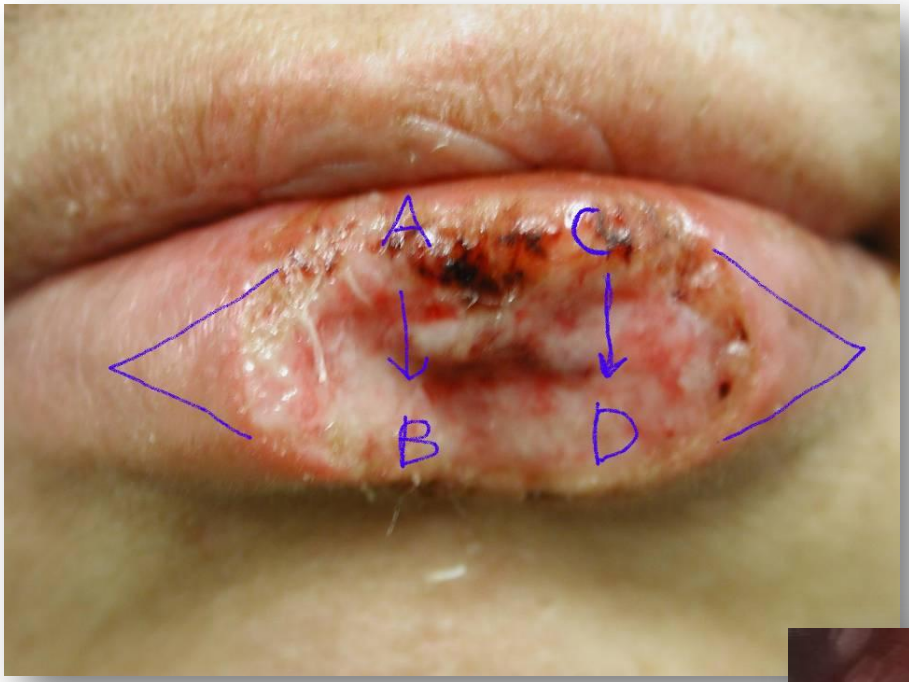
Telehealth Surgical Referrals

- A review of 56 telehealth cases that led to direct surgical referrals found:
  - 92.9% accuracy in predicting procedure
  - 31 minute average difference in predicted versus actual operative time.

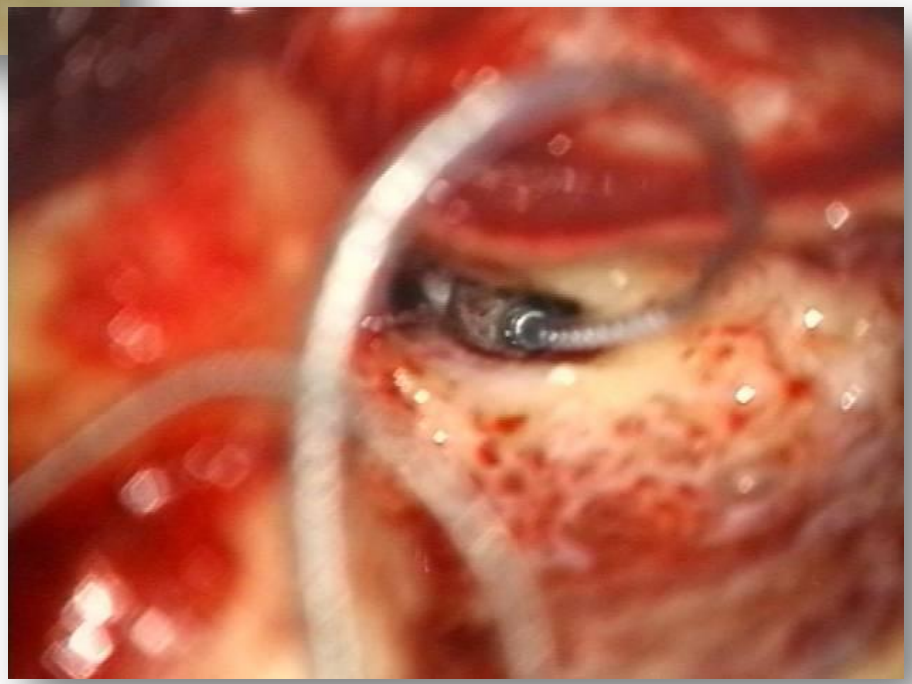


- By comparison, a matched selection of 56 non-telehealth referrals for surgery:
  - 87.5% accuracy in predicting procedure
  - 36 minute average difference in predicted versus actual operative time.

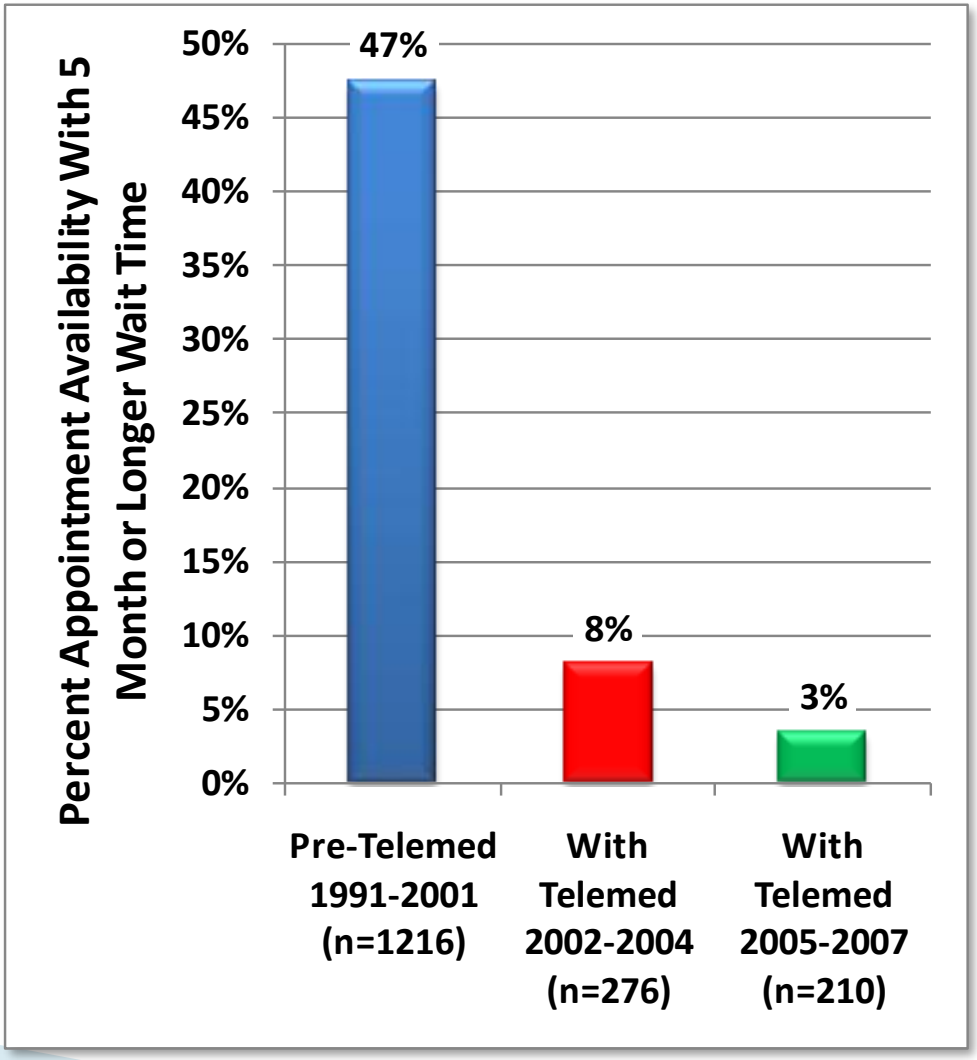
Clinical Feedback



Post cochlear implant rehab

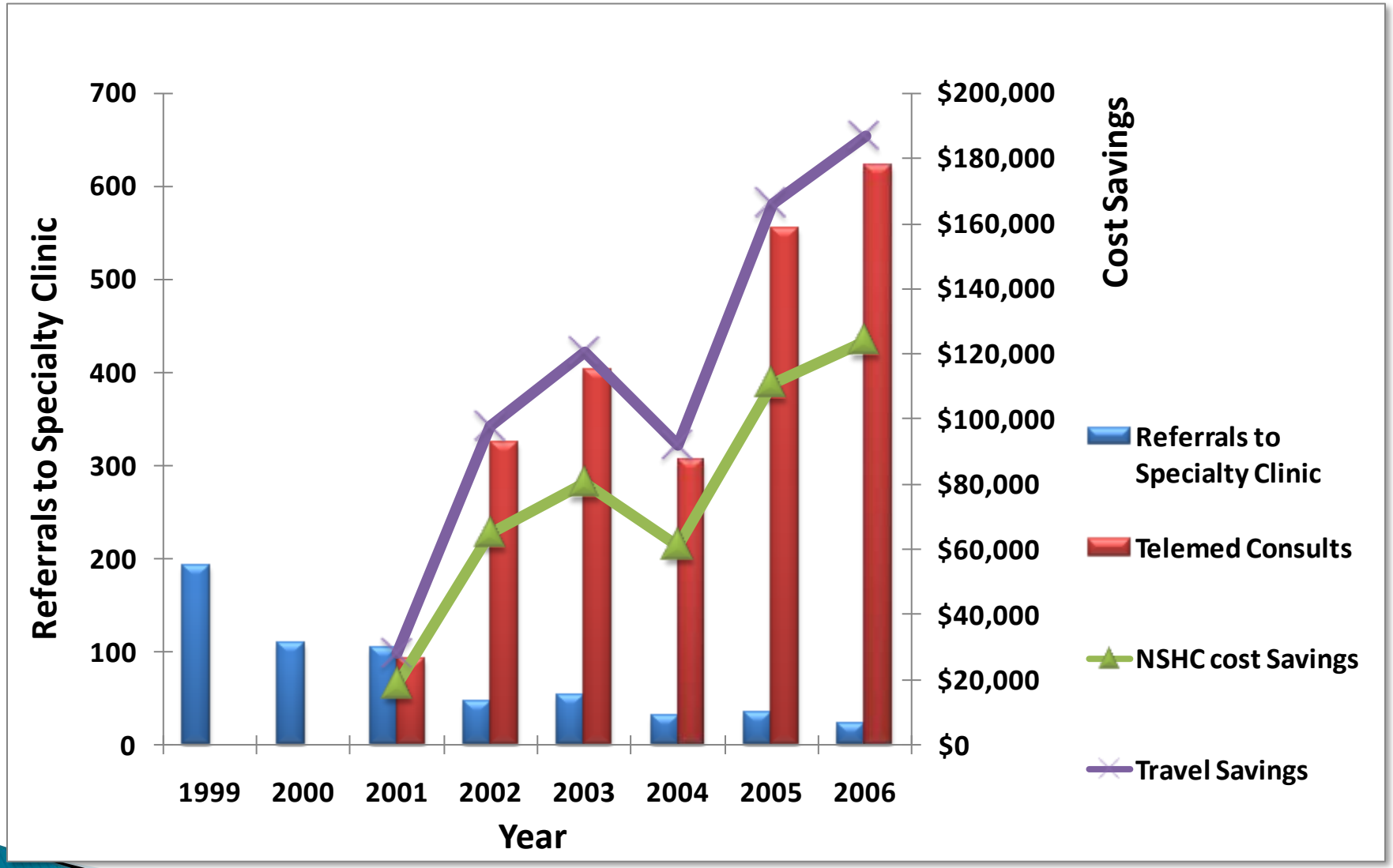


Telehealth Impact on Extended Waiting Times (> 4 months)



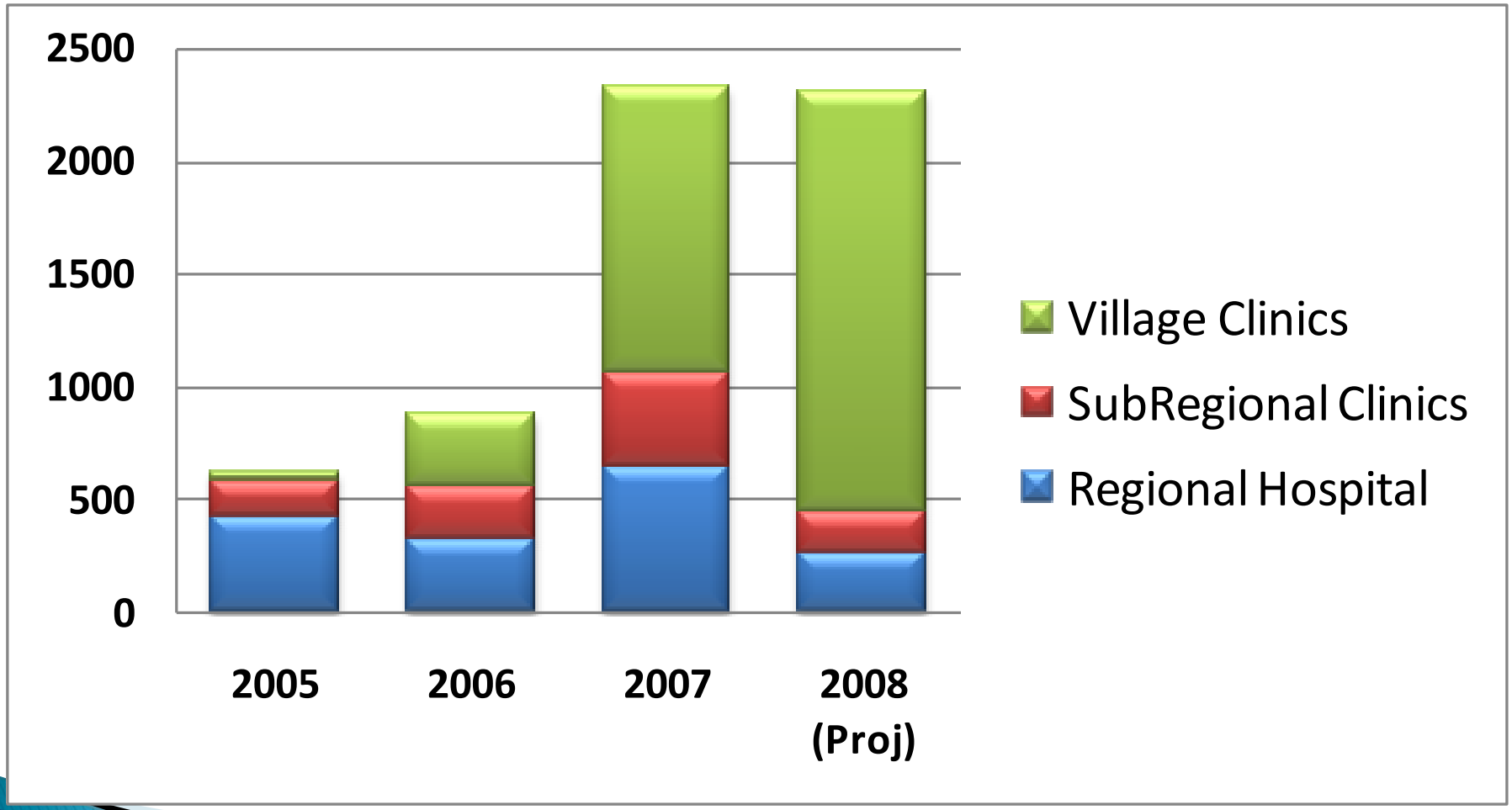
Data courtesy of Phil Hofstetter

Access



Data courtesy of Phil Hofstetter

Example of Dynamic Re-Distribution of Telehealth




UNITED STATES
POSTAL SERVICE

Traveling Audiologist

Travel Avoidance = Cost Savings

	Patient Visits	Cost
Traveling Audiologist Program	1,458	($141,000)
Patient Travel Prevented	755	$310,000

Assumptions:

- Only travel to hub is being saved.
- Escort required if patient less than 18 years old
- No lodging / per diem calculated

Note: 502 less than 18 yrs old

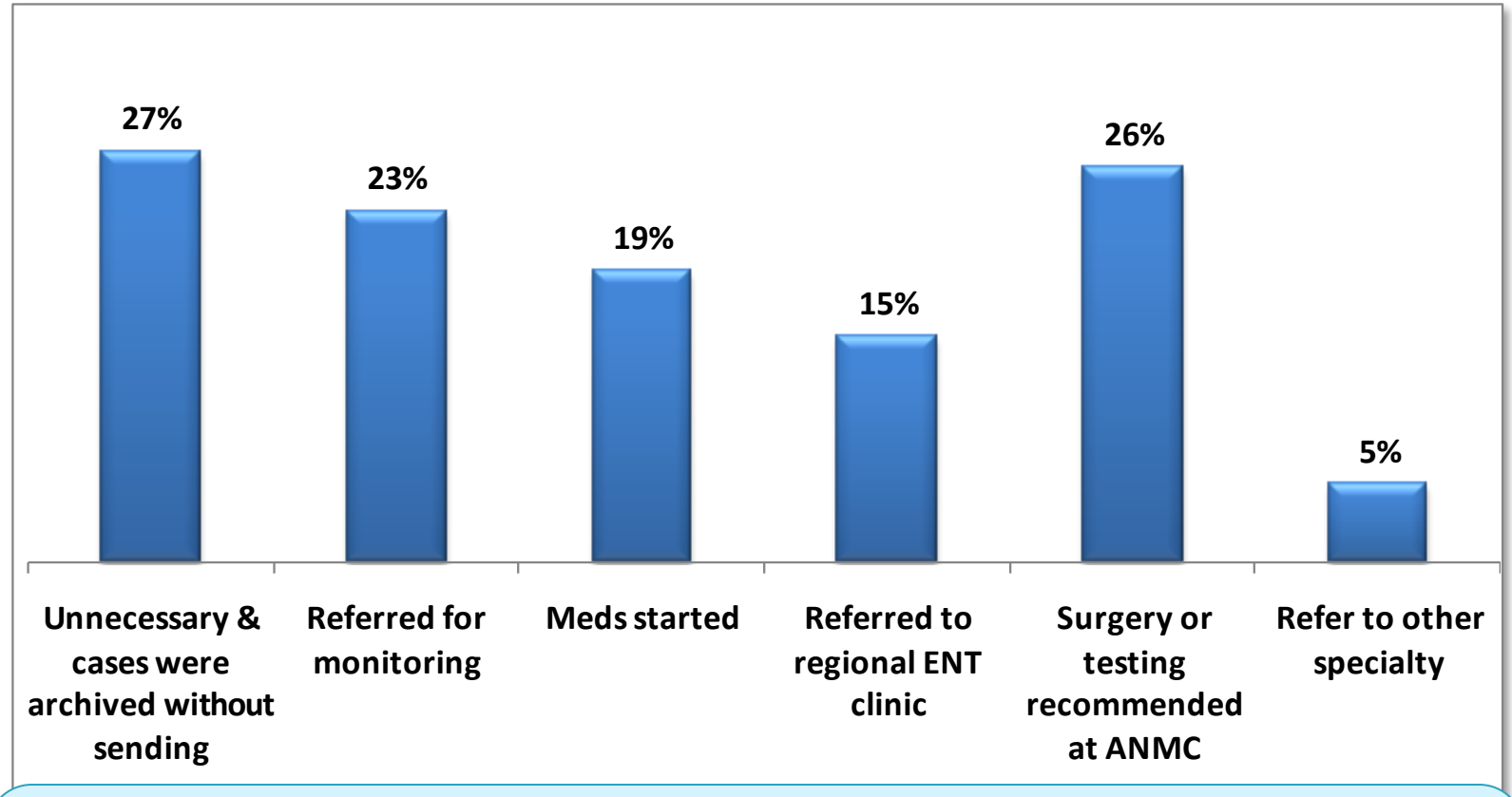
Net Savings in Travel Costs **$169,000**

(120% ROI)

Note1: 1,458 patients

Note2: Percentages may not add to 100% due to multiple outcomes per case.

Outcomes



About 69% of the patients seen needed something done (meds, surgery, ongoing monitoring) and 27% needed to be screened out.

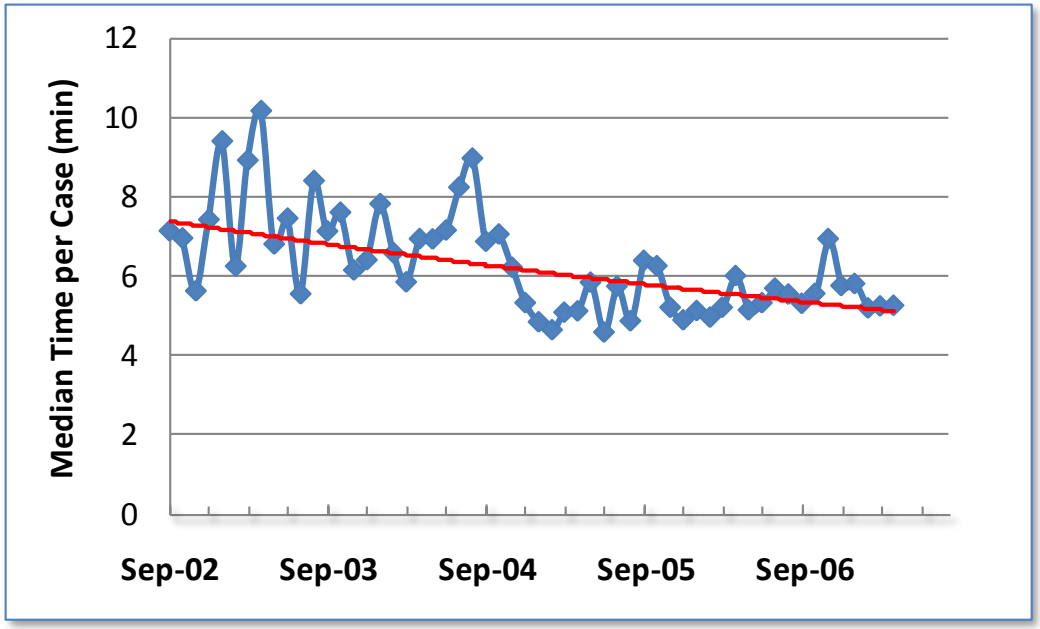
Specific to Medicaid Patients

- 734 Medicaid Patients (50.3% of 1,458 total)
- Travel was saved for 646 (83%) of the patients
  - Most of these (533) would have required a parent or guardian to travel.
  - Mean savings is $443/patient … compared to $100/patient for running the program.
- 29% were directly referred to Anchorage for surgery or testing.

ANMC: Access To Care

4,457 consult requests received at ANMC from Sep 2006 to Sep 2008

Median Time Spent by a Consultant Responding to a Case



Median Time per Case

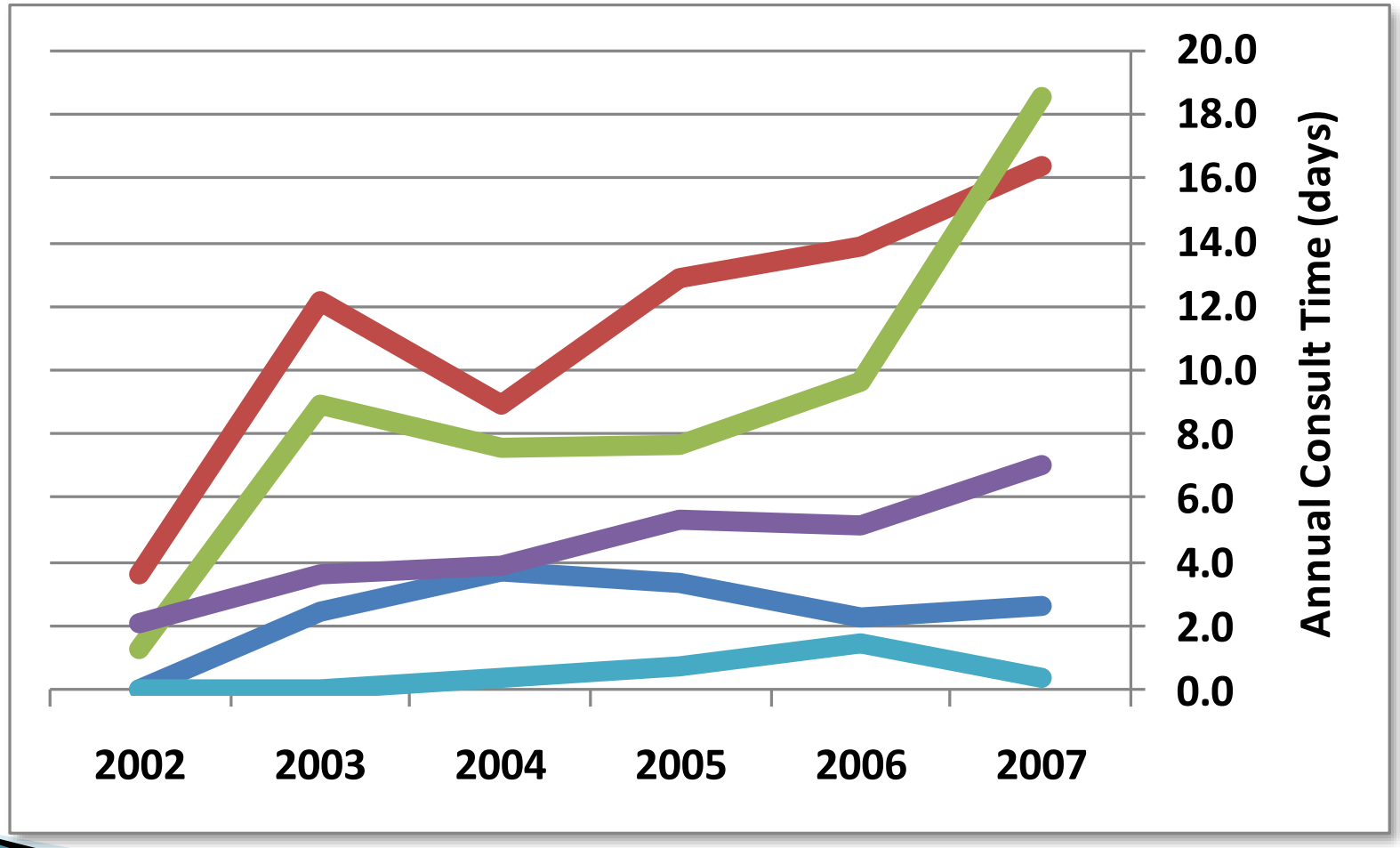
Originating Site	Consultant Site
20.5 min.	6. 0 min.

ANMC provides same day turnaround time on 65% of all telehealth cases, and completes 84% of all telehealth cases by the next business day.

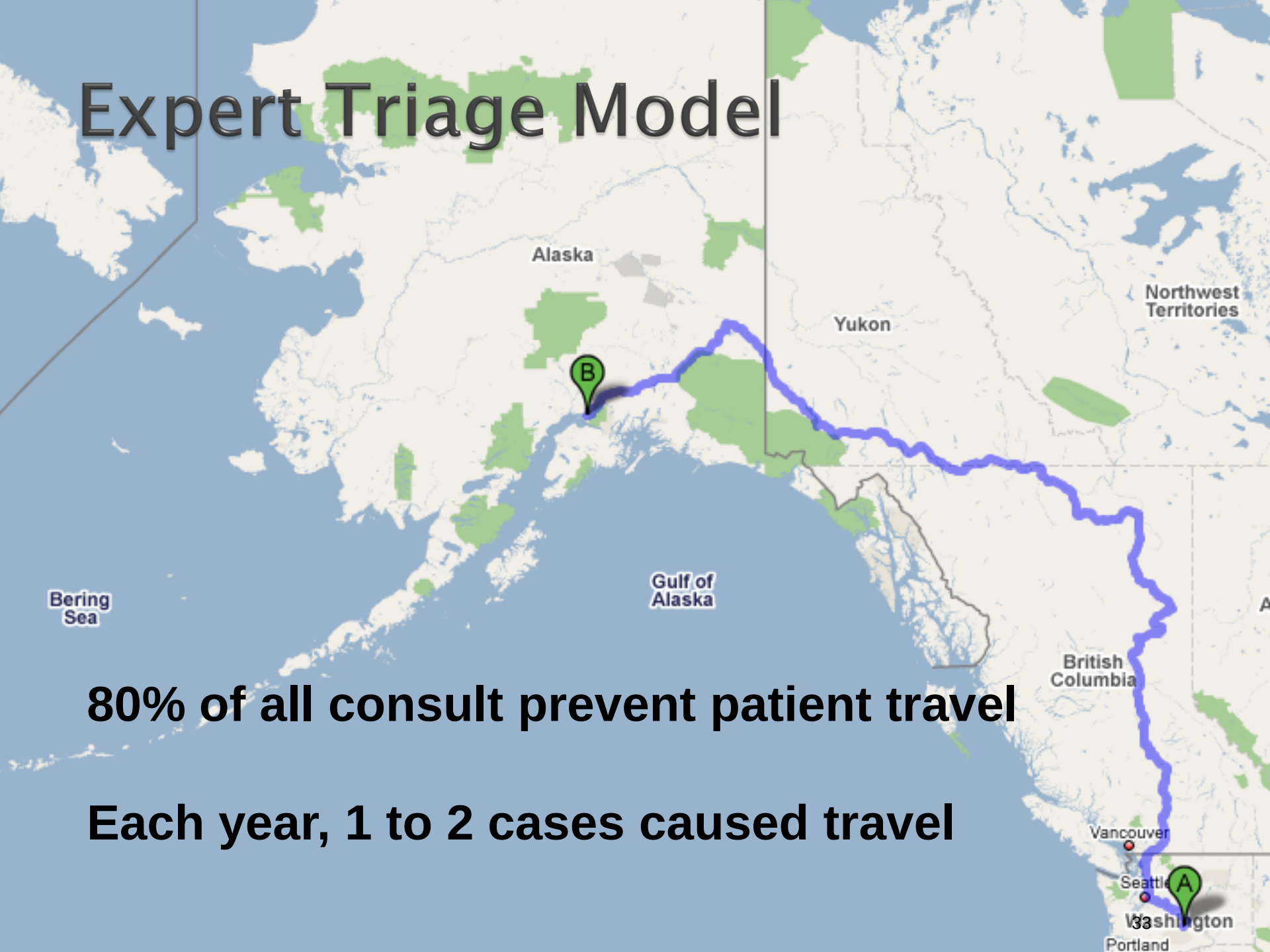
50% of all cases being turned around in one day are actually turned around in 1 hour.

Average response rate for "same day" turnaround is 2.5 hours.

ANMC Consultation Time to 5 Organizations



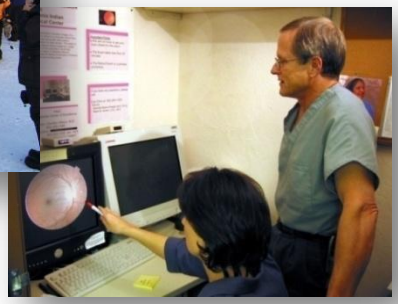
Expert Triage Model



80% of all consult prevent patient travel

Each year, 1 to 2 cases caused travel

IHS/JVN Alaska



- Three remote sites *(Jan '09)*
- 96 Patients imaged
  - 66 patients → follow up in 12 mo.
- 30 patients have pathology that require an in-person visit with an ophthalmologist
  - 11 with diabetic retinopathy
  - 19 with additional pathology: Large optic cups, hard exudates, macular drusen, pseudophakia, ungradeable images with hx

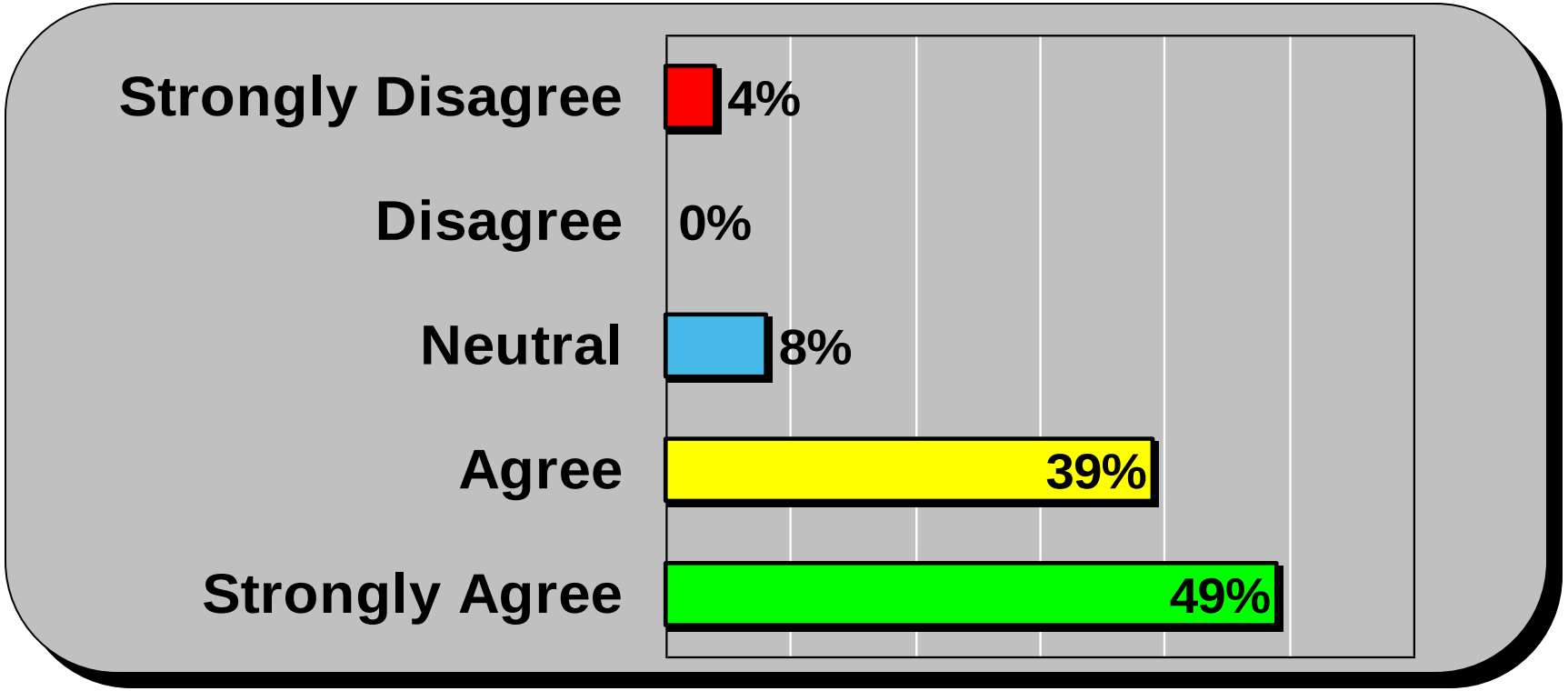
Diabetic Retinopathy is the leading cause of new blindness among adults

Blindness due to diabetes can be eliminated by timely Dx and Tx

AFHCAN

For this case, rate the following statement:

Telemedicine helps me COMMUNICATE with a doctor. *(n=2,672)*



PROVIDER Responses

64%	Helped **EDUCATE** patient (N=2,605)
76%	Made **JOB MORE FUN** (N=2,852)
77%	Improved **PATIENT SATISFACTION** (N=2,441)
86%	Improved **QUALITY OF CARE** (N=2,512)
88%	Helped **COMMUNICATE** with doctor (N=2,672)

Percentages of cases created to which the provider "Agreed" or "Strongly Agreed" with the statement.

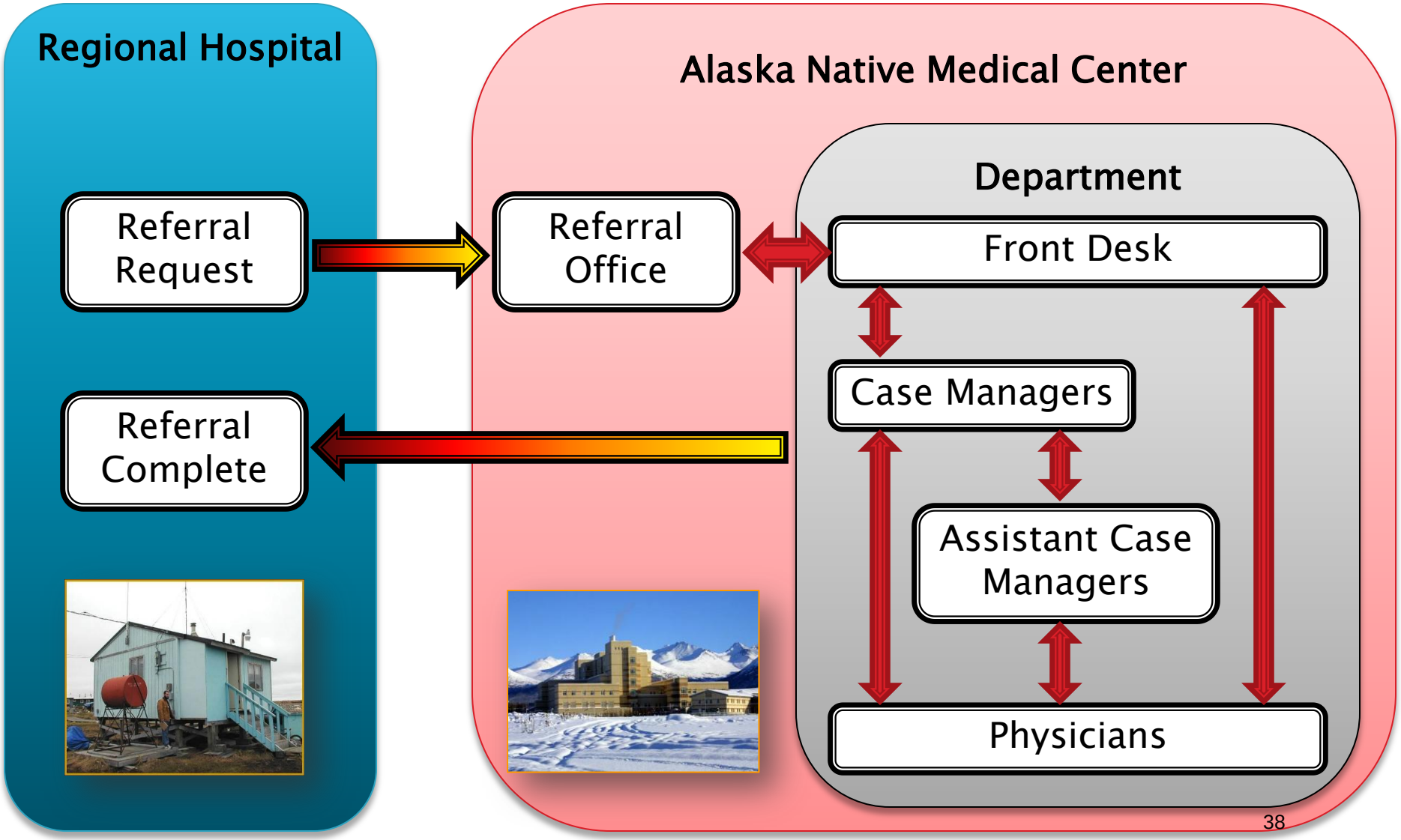
AFHCAN

EHR – Telehealth Interface

Executive Order 13410 signed by President George W. Bush in August 2006, federal agencies administering or sponsoring federal health programs *must implement any and all relevant recognized interoperability standards*.

- Consistent with Federal efforts to increase access to, and completeness of, health record.
  - S&F Telehealth creates an extraordinary health record.
    - Multimedia, rich, timely, appropriate.
  - "Forces" providers to create better documentation.
  - Highly auditable
- Agencies are discussing how to connect disparate technologies.

New Consultative Models



There: Efficient and Timely Health Care Delivery … that leverages our existing telehealth expertise.

What will be needed from policy, resource, structure standpoint to expand telehealth

In the simplest terms, our behavior in medical systems is driven by:

- Our commitment to deliver quality care
- Considerations of the cost of delivering that care
- And what is reimbursed and what is not

- Alaska enjoys a very supportive "reimbursement" climate.
  - Medicaid, Medicare, 3rd party payers.

- There is no current system to "quantify" store and forward effort for reimbursement.
  - The current Evaluation and Management (E&M) coding system is an imperfect fit.

- The payment system is misaligned with costs and benefits for telehealth.
  - Method of reimbursement provides no incentive to create and send case.

CODING LEVELS

E&M, New Patient

E&M, Established

Consult

99201 New Patient, E&M Level 1	2%	Level 1
99212 Established Patient, E&M Level 1	44%	
99241 Consult Level 1	53%	
99202 New Patient, E&M Level 2	0%	Level 2
99213 Established Patient, E&M Level 2	0%	
99242 Consult Level 2	0%	

AFHCAN

ALASKA NATIVE TRIBAL HEALTH CONSORTIUM

For those who send…

YES

Time
Effort
Equipment
Network costs
Training
Upkeep

NO

Reimbursement
Incentive

Medicaid Study

Decreased Travel = Cost Savings

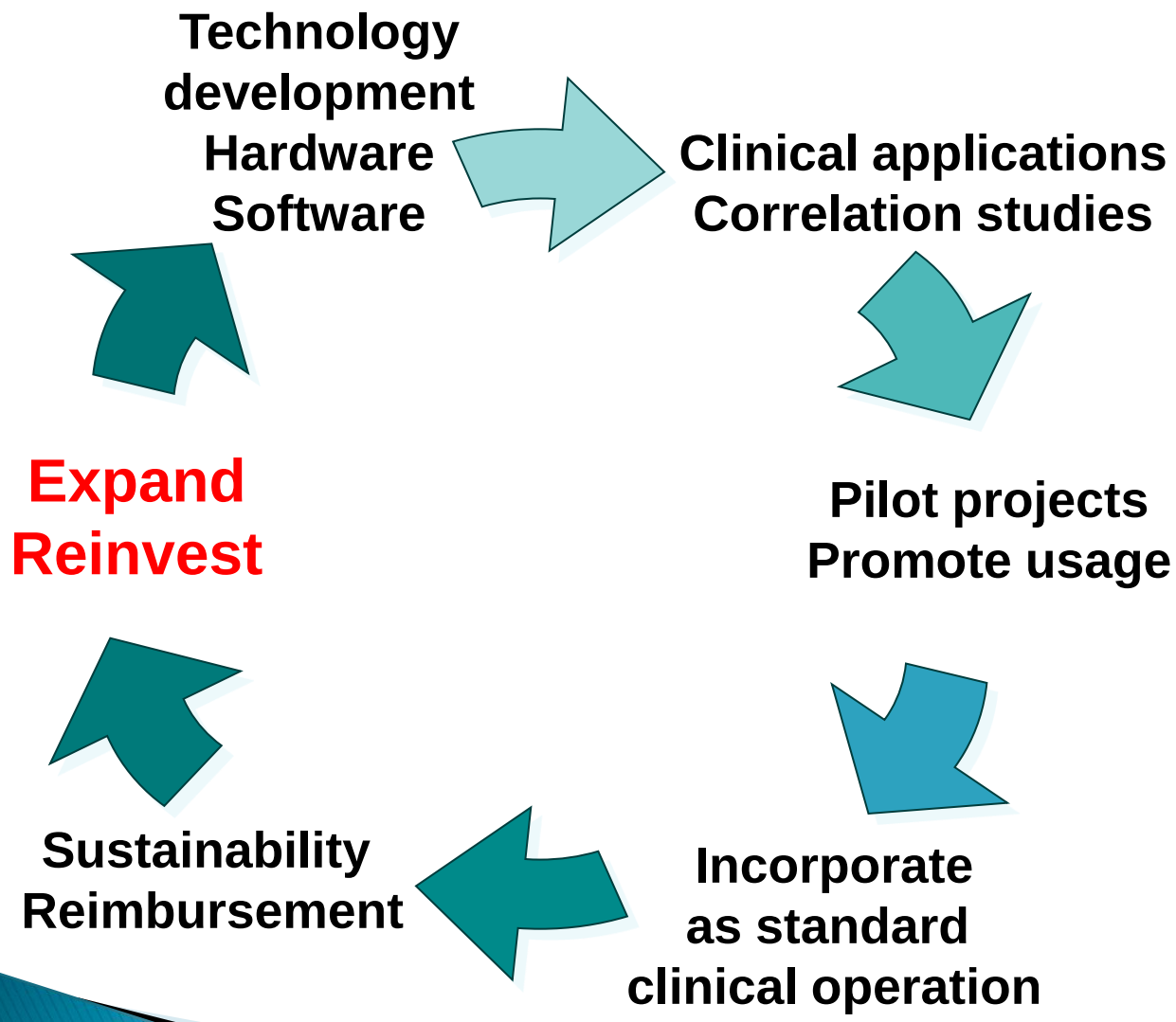
	Quantity	Cost
Claims Paid by Medicaid	**91**	**($6,970)**
Telemedicine Prevented Travel	**79**	**$55,437**
Net Savings Realized by Medicaid		**$48,467**

Notes:

- Only specialty clinic travel is being saved.
- 86% of cases were from village → region
- Assume all cases had an escort
- Travel costs average $307.57 RT per person
- No lodging / per diem calculated

Note: For every $1 spent by Medicaid on reimbursement, $7.95 is saved on travel costs.

Reimbursement is critical for …



Sustaining and expanding existing systems and demonstration projects

Promoting creation of new systems and applications for telehealth

Perception:

" It does not appear that teleotolaryngology has appeared on most practitioner's radar since there is little or no reimbursement.

…

Until that happens, I think it will be of minimal interest "

A Systems Approach to Large Scale Deployment

- Workflow processes and relationships must be in place prior to telehealth
- Systematic approach to training and support
- Promote and sustain utilization
  - Key to cost savings
  - Marketing ,promotion, incentives for use

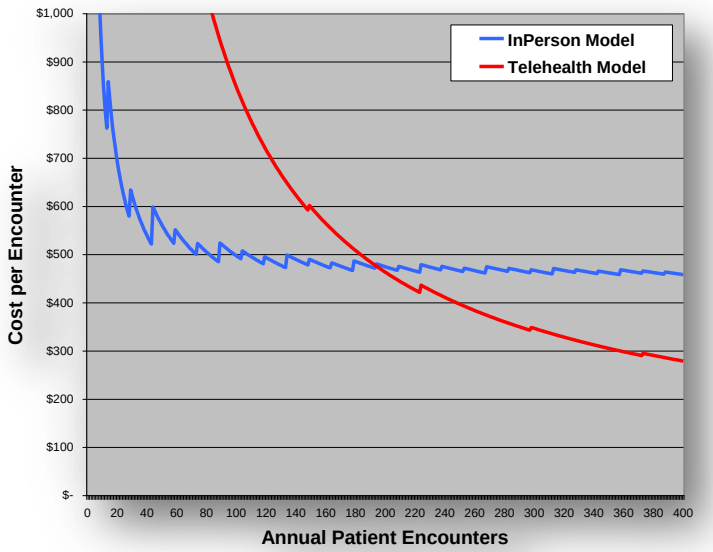
- Creating large scale provider networks to get the full benefit of telehealth investment
  - **Benefits are mostly realized when large scale is achieved.**

Costing Model

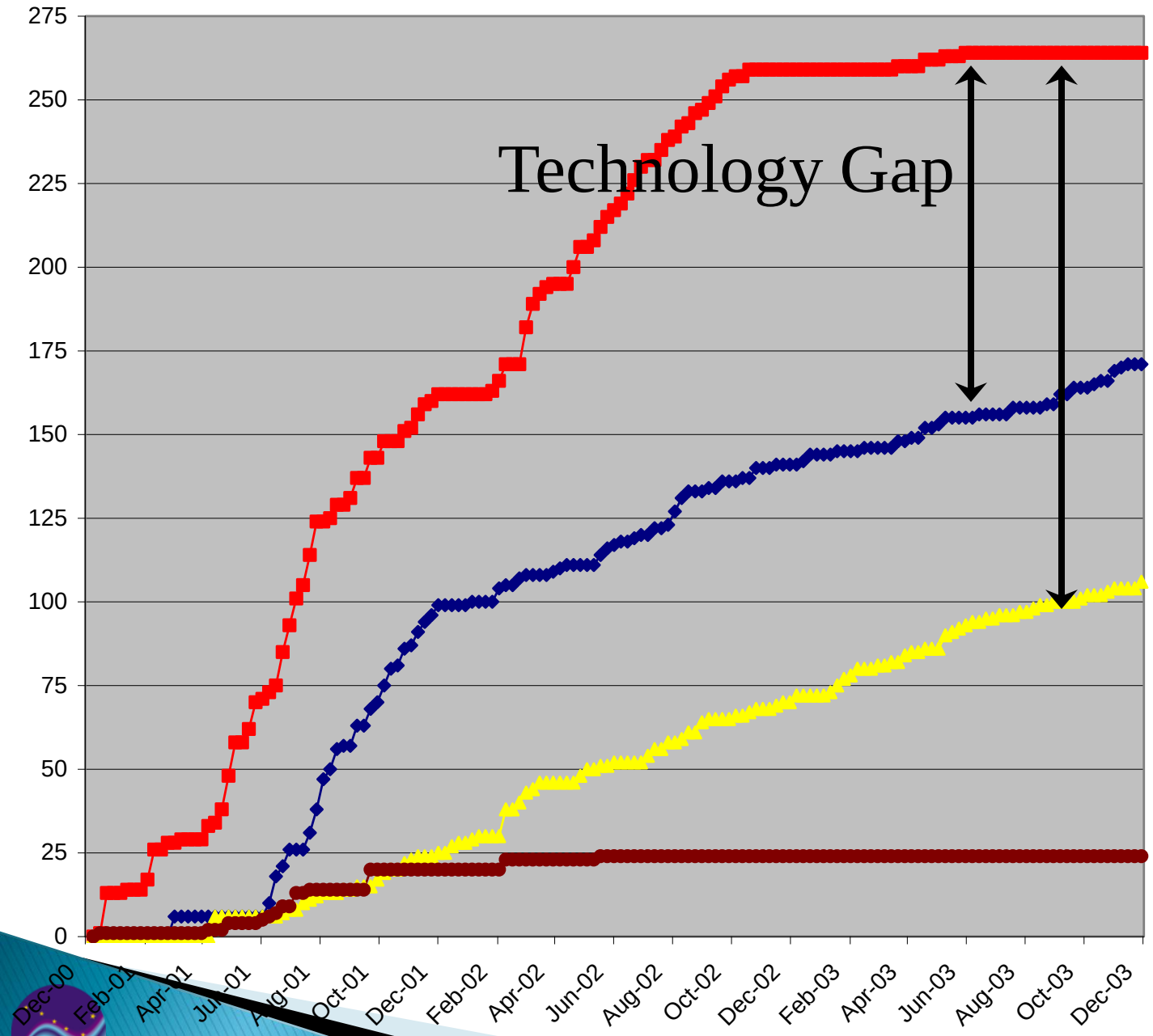
Estimating the COST PER ENCOUNTER for delivering specialty care … by traditional versus telehealth model

System Variables include:

Patient location
Patient age
Provider location
Reimbursement rates
Denial rates
Predicted coding levels
Payer mix
Facility fee
Telehealth originating fee
Encounter type
Travel costs
Lodging costs
Per diem costs
No Show rate
Patient lost work time
Provider lost work time
Length of encounter
Support staff cost
Clinic space costs
Clinic equipment costs
Hardware costs
Software costs
Support costs
Connectivity costs
Provider salary
Training costs



- Telehealth is more cost effective at higher volumes.
- Highly sensitive to:
  - How often telehealth eliminates the need for subsequent in-person encounter.
  - Originating telehealth from patient's location.



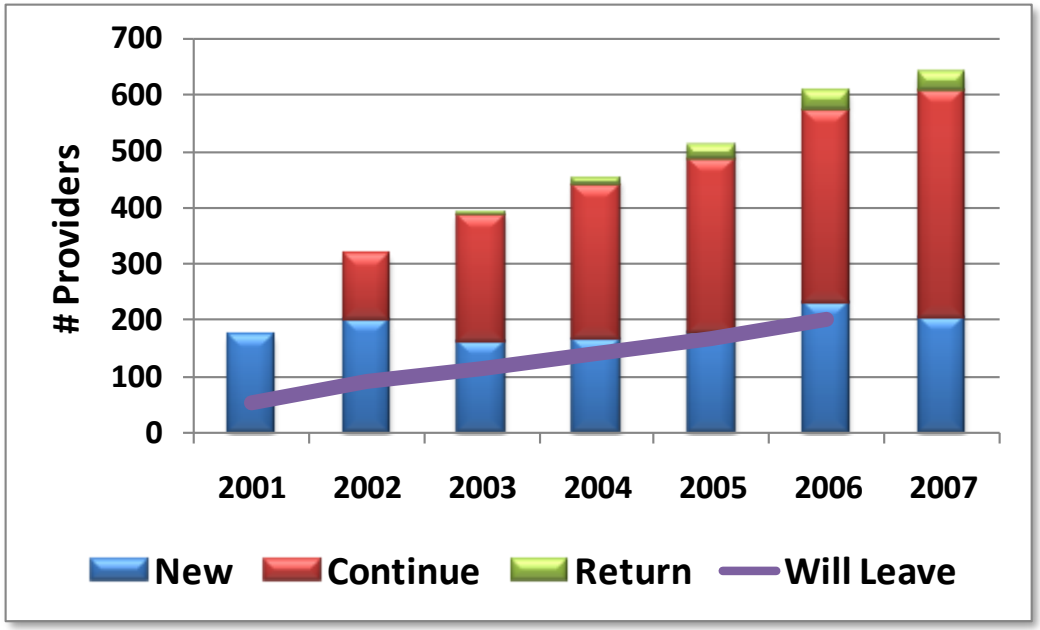
Systems Gap

(Service, Training and Support)

AFHCAN

ALASKA NATIVE TRIBAL HEALTH CONSORTIUM

Training Challenges

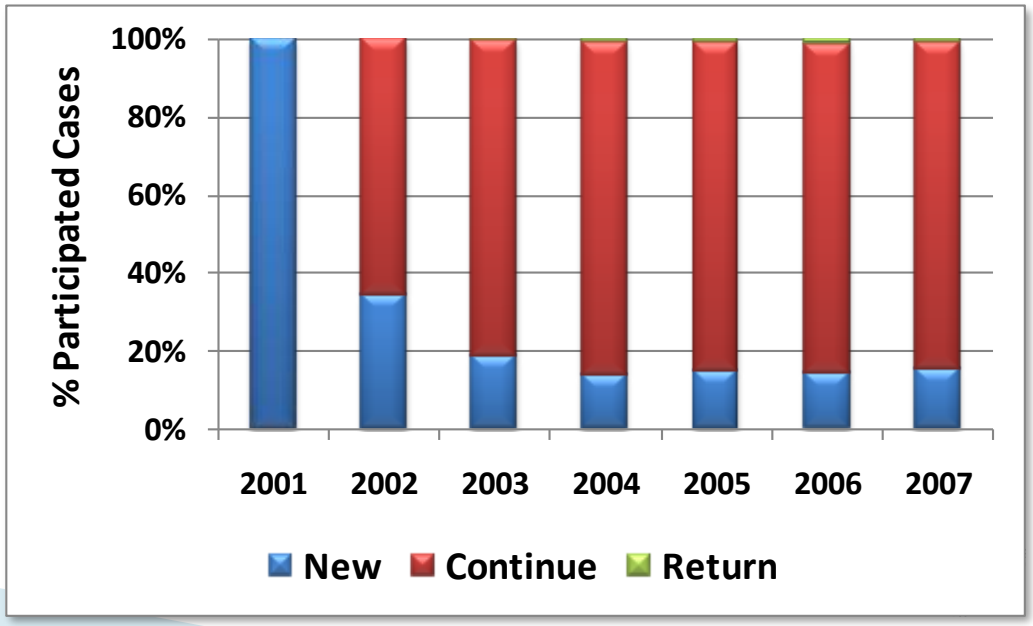


TRAINING NEW USERS

Each year, 35% of the users are using the AFHCAN system for the first time.

EMPOWERING EXPERIENCED USERS

Each year, 85% of the cases involve only "experienced" AFHCAN users.



A Centralized Approach

- Design Services
  - “Readiness” Assessment
  - Technology Assessment
  - Design: Interfaces, Software/Hardware Platforms
- Deployment Services
  - Installation, Certification, Training
- Clinical Services
  - Specialty Centers
  - Care delivery Models
- Support Services
  - Information Technology, Interface
  - Training
  - Marketing
- Business Services
  - Legal, Regulatory, Contractual, Coding, Reimbursement
- Evaluation and Outcomes

Other Opportunities

- Leverage simplicity of existing design:
  - User Interface, Portable Systems
  - Custom Forms – e.g. Federal Disaster Health Form
- Public Health Preparedness and Emergency Response
  - Multimedia / Secure reporting
  - Secure response to “last mile”
- Epidemiology and Disease Surveillance
  - Simple interface & equipment at “last mile”
- Environmental Public Health
  - Aggregation and Reporting of test results – e.g. arsenic / lead
- Prison systems

Added Benefits

- S&F Telehealth results in a better medical record, especially with EHR integration.
- S&F Telehealth provides an excellent audit log to minimize fraud and abuse.
- Improved communication can play a role in:
  - Public Health Preparedness and Emergency Response
  - Epidemiology and Disease Surveillance
  - Environmental Public Health

Recommendations

- Keep Medicaid reimbursements for Telehealth.

- Determine if State of Alaska should / will play a role in supporting the expansion of telehealth within Alaska.

Recommendations – Growth

- Create a more appropriate reimbursement model.
  - Fee structure for "creating" a telehealth case (Q3014). Supported by time studies.
  - Create an "all in one" fee structure for telehealth consultations.
- Legislate 3rd parties payers to reimburse for telehealth.
- Support initiatives to grow usage within private sector, prisons, and other markets.
- Create a small telehealth advisory board to provide feedback and suggestions to the state.

Thank You

Stewart Ferguson
sferguson@anthc.org
(907) 729-2262

John Kokesh
jkokesh@anthc.org
(907) 729-1416

Alaska Native Tribal Health Consortium, Anchorage, AK